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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,722	09/18/2001	Kenneth A. Peterson	SD6436. 1/S97675	1517

7590 10/23/2002

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EXAMINER

LEE, EUGENE

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 10/23/2002

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/955,722

Applicant(s)

PETERSON ET AL.

Examiner

Eugene Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 31-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Embodiment II (Fig. 2a, claims 1-25, 28-30) in Paper No. 3 is acknowledged. The traversal is on the ground(s) that Embodiment I (claims 25-27), and Embodiment II (claims 1-25, 28-30) both describe wafers and therefore a single search should be sufficient to cover both Embodiments adequately without placing an undue burden on the Examiner.

In view of the attorney's argument, the Examiner has examined claims 1-30.

However, claims 31 thru 34 (Embodiment III) are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 7, 15, 17, 18, and 21 thru 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Degani et al. '728. Degani discloses (see, for example, FIG. 2) a substrate (wafer) 10 comprising a device (sensitive area) 20 and protective coating 65 formed thereon. The wafer is subsequently diced and the protective coating remains on the substrate during the dicing process. The protective coating itself is removed from the substrate after the dicing process.

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4. Claims 1 thru 7, 18, and 21 thru 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaeriyama et al. '046. Kaeriyama discloses (see, for example, FIG. 1) a semiconductor wafer 10 comprising a resist layer (temporary protective layer) 20 and micromechanical structures (sensitive area) 16. In FIG. 3, Kaeriyama discloses the wafer as being diced (step 42) and the resist layer subsequently removed (see, for example, column 6, lines 54-60). In column 5, lines 61-65, Kaeriyama discloses the structures 16 could be accelerometers, micromotors, or for use in biological or chemical sensors.

5. Claims 1 thru 7, 18, and 20 thru 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Kao et al. '995. Kao discloses (see, for example, FIGURE 2C) a wafer 300 comprising micromechanical systems (sensitive area) 310, and water insoluble protective layer (temporary protective coating) 330. In FIGURE 2D, Kao shows the wafer being diced and the water insoluble protective layer subsequently removed. In step 570 of FIGURE 5, Kao discloses that bond pads connect to the leads of a lead frame. Also see, for example, column 7, lines 34-44.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8 thru 17, 19 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kao '995 as applied to claims 1 thru 7, 18, and 20 thru 26 above. Kao discloses the claimed

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invention except for the specific materials of the protective coating that protects a sensitive area on a wafer. Kao simply states the material used to protect the micromechanical system “may be composed of any substantially insoluble material known to those of ordinary skill in the art.”

See column 5, lines 1-5. The use of conventional materials to perform their known functions in a conventional process is obvious. *In re Raner* 134 USPQ 343 (CCPA 1962). Kao teaches that any conventional material can be used that is known to be capable of protecting underlying layers, which could include any of those materials listed in claims 8-17, 19 and 27. Furthermore, as chemical composition of the protective layer does not seem to be critical to the invention, it must be shown that any one or all of the listed materials yield an **unexpected** product or result.

In re Margolis 228 USPQ 940 (Fed. Cir. 1986); *In re Kirsch* 182 USPQ 286 (CCPA 1974); *In re Suether* 181 USPQ 36 (CCPA 1974); *In re Costello* 178 USPQ 290 (CCPA 1973); *In re Von Schickh* 150 USPQ 300 (CCPA 1966); *In re Sussman* 60 USPQ 538 (CCPA 1944); *In re Kaplan* 45 USPQ 175 (CCPA 1940).

7. Claims 28 thru 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kao '995 as applied to claims 1 thru 7, 18, and 20 thru 26 above, and further in view of Smith et al. '367. Kao does not disclose a performance-enhancing coating disposed on the released MEMS element. However, Smith discloses that applying a chemical species (performance-enhancing coating) to micromechanical structures in order to prevent the structures from adhering to other objects. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the chemical species (performance-enhancing coating) to the micromechanical system of Kao in order to prevent the device from adhering to other objects.

Product-by-Process Limitations

While not objectionable, the Office reminds Applicant that “product by process” limitations in claims drawn to structure are directed to the product, per se, no matter how actually made. *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also, *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wethheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al.*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a “product by process” claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in “product by process” claims or *otherwise*. Note that applicant has the burden of proof in such cases, as the above case law makes clear. Thus, no patentable weight will be given to those process steps, which do not add structural limitations to the final product.

For example, claims 7, 15, and 21-24 contain a product-by-process limitation.

INFORMATION ON HOW TO CONTACT THE USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Lee whose telephone number is 703-305-5695. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Eddie C. Lee can be reached on 703-308-1690. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Eugene Lee
October 20, 2002


GEORGE ECKERT
PRIMARY EXAMINER